

WHAT IS CLAIMED IS:

1. An integrated system of frameworks and data repositories for generating a graphical user interface in a client-server environment comprising:
  - a user interface (UI) repository residing in a database accessible to a client server network environment, where said UI repository, contains a UI element, which defines data element attributes including data type, how to display data and labels;
  - a screen repository residing in the database accessible to the client-server network environment, where said screen repository includes screen attributes, which defines the hierarchical navigational tree structure of screens for an graphical user interface (GUI) application and further defines what screen will be constructed and defines a GUI component of the screen;
  - a data binding framework operable to bind data to the UI element and the GUI component;
  - a (GUI) framework operably residing at a client in the client-server network environment, where said (GUI) framework is operable to control how data is handled and processed within the GUI component of the GUI application including binding data to the GUI component utilizing the data binding framework; and
  - a navigation framework operably residing at the client, where said navigation framework controls generating and displaying of the screens within an application and further builds a navigation tree structure based on the screen attributes.

2. The integrated system of frameworks and data repositories for generating a graphical user interface as recited in **claim 1**, further comprising:

a security framework operable to communicate information to the navigation framework causing the navigation framework to selectively deny a user access to screens by not providing the user with selections that would navigate to the screen.

3. The integrated system of frameworks and data repositories for generating a graphical user interface as recited in **claim 1**, further comprising:

a verification framework operable to apply business rules to data contained in a data set and determine if the data is in error and if in error the verification framework communicates with the GUI component to display an error message.

4. An integrated system of frameworks and data repositories for generating a graphical user interface in a client-server environment comprising:

a graphical user interface (GUI) framework operably residing at a client in a client-server network environment, where said GUI framework is operable to control how data is handled and processed within a GUI component of a GUI application including binding data to the GUI component utilizing a data binding framework;

a collection of integrated repositories relationally inter referenced by elements within their respective attribute tables operable for accessing and integrating all attribute elements relating to generating a graphical user interface;

a collection of executable object oriented routines operable to manipulate the GUI

framework;  
a collection of XML files operable to access and export data from the repositories at run time for use by the GUI application;  
an XML layout manager operable to define the screen layout from the collection of XML files; and  
a navigation framework operably residing at the client, where said navigation framework controls generating and displaying of screens within the GUI application based upon the XML layout manager and the repository attributes accessed and exported by the collection of XML files and further builds the navigation tree structure based on the repository attributes.

5. The integrated system of frameworks and data repositories for generating a graphical user interface as recited in **claim 4**, further comprising:

a security framework operable to communicate information to the navigation framework causing the navigation framework to selectively deny a user access to screens by not providing the user with selections that would navigate to the screen.

6. The integrated system of frameworks and data repositories for generating a graphical user interface as recited in **claim 4**, further comprising:

a verification framework operable to apply business rules to data contained in a data set and determine if the data is in error and if in error the verification framework communicates with the GUI component to display an error message.

7. An integrated system of frameworks and data repositories for generating a graphical user interface in a client-server environment comprising:
  - a screen repository residing in the database accessible by a client-server network environment, where said screen repository includes screen attributes, which defines the hierarchical navigational tree structure of screens for an graphical user interface (GUI) application and further defines what screen will be constructed and defines a GUI components of the screen;
  - a user interface (UI) repository residing in a database accessible to the client server network environment, where said UI repository, contains a UI element, which defines data element attributes including data type, how to display data and labels; and
  - a data binding framework operable to bind data to the UI element and the GUI component based on the data type defined in the UI repository.

8. The integrated system of frameworks and data repositories for generating a graphical user interface as recited in **claim 7**, further comprising:
  - a security framework operable to communicate information to the navigation framework causing the navigation framework to selectively deny a user access to screens by not providing the user with selections that would navigate to the screen.

9. The integrated system of frameworks and data repositories for generating a graphical user interface as recited in **claim 7**, further comprising:

a verification framework operable to apply business rules to data contained in a data set and determine if the data is in error and if in error the verification framework communicates with the GUI component to display an error message.

10. An integrated system tool for building of frameworks and data repositories for generating a graphical us interface comprising:

an administrative computing tool including,

a navigation tool for building a navigation framework adapted to control the generation of screens for a graphical user interface (GUI) application and further adapted to define the hierarchical relationship of the screens,

a screen repository tool operable to build a repository of screen attributes to establish a hierarchical screen navigation structure and a corresponding Java class construct to be executed and a GUI component,

a user interface repository tool operable to build a user interface repository having user interface attribute tables of user interface elements corresponding to the GUI component, and

a data binding framework tool operable to build a data binding framework operable to bind data from an appropriate data set to the user interface element and the GUI component.

11. The integrated system tool for building frameworks as recited in **claim 10**, where the administrator computing tool further comprises:

a security framework tool operable to build a security framework operable to communicate information to the navigation framework causing the navigation framework to selectively deny a user access to screens by not providing the user with selections that would navigate to the screen.

12. The integrated system tool for building frameworks as recited in **claim 10**, where the administrator computing tool further comprises:

a verification framework tool operable to build a verification framework operable to apply business rules to data contained in a data set and determine if the data is in error and if in error the verification framework communicates with the GUI component to display an error message.

13. A method of generating a graphical user interface utilizing an integrated system of frameworks and data repositories comprising the steps of:

Receiving a screen request to a graphical user interface (GUI) application based on a user input;

Accessing and constructing a basic screen and screen attributes from a screen repository corresponding to the user input as determined by a navigation framework;

Binding GUI components defined by the screen attributes with user interface elements from a UI repository based on the attributes defined in the UI repository;

Binding data to the GUI components and UI elements; and  
Displaying the screen.

14. The method of generating a graphical user interface as recited in **claim 13**, further comprising:

filtering a screen with a security framework operable to communicate information to the navigation framework causing the navigation framework to selectively deny a user access to screens by not providing the user with selections that would navigate to the screen.

15. The method of generating a graphical user interface as recited in **claim 13**, further comprising:

displaying an error message with a verification framework operable to apply business rules to data contained in a data set and determine if the data is in error and if in error the verification framework communicates with the GUI component to display an error message.

16. A method for building an integrated system of frameworks and data repositories for generating a graphical user interface comprising the steps of:

building a graphical user interface (GUI) framework operable to reside at a client in a client-server network environment, where said GUI framework is operable to control how data is handled and processed within a GUI component of a GUI application including binding data to the GUI component utilizing a data binding framework; and

building a collection of integrated repositories to be relationally inter referenced

by elements within their respective attribute tables operable for accessing and integrating all attribute elements relating to generating a graphical user interface.

17. The method for building an integrated system of frameworks and data repositories as recited in **claim 16** further comprising the steps of:

building a verification framework operable to apply business rules to data contained in a data set and determine if the data is in error and if in error the verification framework communicates with the GUI component to display an error message.

18. The method for building an integrated system of frameworks and data repositories as recited in **claim 16** further comprising the steps of:

building a verification framework operable to apply business rules to data contained in a data set and determine if the data is in error and if in error the verification framework communicates with the GUI component to display an error message.